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Halides, Carbonates, Nitrates, Mixtures, Viscosimeters.

The viscosity coefficients of molten salts were determined with an apparatus consisting of a nickel ball suspended from a chemical balance. The viscosity coefficients obtained for H_2O , KNO_3 , and $NaCl$ showed excellent agreement with published data. The viscosity coefficients of KCl , $NaCl$, $NaNO_3$, KNO_3 , mixtures of KCl and $NaCl$, and mixtures of $NaNO_3$ and KNO_3 were determined at various temperatures. At a given temperature, the viscosity was minimum for a binary mixture containing the salts in 1:1 molecular ratio.
(Author)

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Order from OTS or SLA \$1.10

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DESCRIPTORS: *Copper alloys, *Tin alloys, *Elec-
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III. Title: Studies...

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*CFSTI TT 70-57151

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ELECTRON DIFFRACTION EXAMINATION OF SURFACE LAYERS OF STAINLESS STEEL CORRODED AT HIGH TEMPERATURES (CORROSION IN ATMOSPHERE OF NH_3 GAS). [1961] 11p. 6 refs.

Order from SLA \$1.60

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DESCRIPTORS: *Stainless steel, Steel, *Corrosion, Electron diffraction analysis, Temperature, *Ammonia, Alloys, Chromium, Nickel, Molybdenum.

An electron-diffraction study was made of the surface layers of 13-Cr, 18-8 and high Mo (approximately 7% of Mo) stainless steel attacked by atmosphere containing NH_3 gas and a little air at 700°C . The relation was determined between the corrosion-resisting natures and the behaviors of Cr, Ni and Mo contained in these alloys. Iron nitrides (mainly Fe_3N) and spinel type oxides (Metallurgy--Corrosion, TT, v. 6, no. 6) (over)

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Sci - Chem, Electron

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Verein ~~Deutscher~~ Eisenhuettenleute
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B8. 37

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Sci - Min/Met
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Effect of Drawing Temperature When Drawing
Steel Wire, II, by T. Nishicka.

JAPANESE, per, Nippon Kinzoku Gakkai, May
1958, pp 225-229, 229-233.

BISI 1848

Sci - Engr

Dec 60

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Investigation of Pt-Mo Alloys, by H. Nishimura.

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No 8, 1958, pp 425-428.

AERE, Harwell Tr-834
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Sci - Min/Metals, Chem
Jul 62

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The Heat of Solution of Hydrogen in Metals, by
Saburo Yanagisawa, Akira Tsujioka, 12 pp.
JAPANESE, per, Nippon Kinzoku Gakkai-si,
Vol 23, No 2, 1959, pp 128-132.
AEC/UCRL-Tr-10384-69

Sci/Chem
Dec 69

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Ena title: umm
Morioka, S., Umezono, A.
For pers. Journal of Japanese Institute of Metals, vol 23,
121-129, 1959

FTD-HC-23-1463-68

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24 Nov 68

62-17171

Okamoto, G. and Sato, N.
EFFECT OF HYDROGEN ION CONCENTRATION
ON THE FLADE POTENTIAL OF NICKEL. [1962]
9p.
Order from ATS \$15.60 ATS-40P59J

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1959,
v. 23, no. 11, p. 662-666.

DESCRIPTORS: *Hydrogen ion concentration,
*Nickel, *Electric potential.

(Chemistry--Physical, TT, v. 8, no. 1)

- I. Title: Flade potential
- I. Okamoto, G.
- II. Sato, N.
- III. ATS-40P59J
- IV. Associated Technical
Services, Inc., East
Orange, N. J.

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On the Measurement of Interstitial Carbon and
Nitrogen Contents, and the Strain-Amplitude
Dependence of Internal Friction in Commercial
Steels, by K. Aoki, et al.

JAPANESE, per, Nippon Kinzoku Gakkai-shi,
Dec 1959, pp 696-698.

BISI 1755

Sci - Min/Nat

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Dec 60

Internal Friction in Quench-Hardened Low-Carbon
Steel and Cold-Worked Iron, by T. Ichiyama, et al.

JAPANESE, per, Nippon Kinzoku Gakkai-si, Dec 1959,
pp 717-721.

BISI 1756

Sci. Min/Mat

Dec 60

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62-22290

Yoshida, Akito.
ACTIVITIES OF IRON OXIDES IN SLAGS OF THE
 $\text{FeO-Fe}_2\text{O}_3\text{-CaO-SiO}_2$ SYSTEMS AND THE EQUI-
LIBRIUM OXYGEN PRESSURE OF O_2 -SLAG-LIQ-
UID IRON, tr. by K. Shimizu. 1962, 13p. 10 refs.
NRCC Technical Trans. 1030.
Order from NRCC \$1.00

NRCC C-4050

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1960,
v. 24, no. 1, p. 50-54.

DESCRIPTORS: *Slags, *Iron compounds, Calcium
compounds, Silicon compounds, Oxides, *Oxygen,
Pressure, Chemical equilibrium, Thermodynamics,
Liquid metals.

(Metallurgy, TT, v. 8, no. 7)

- I. Yoshida, A.
- II. NRCC TT-1030
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61-18297

Monma, Kaizo and Suto, Hajime.
ON THE SURFACE TENSION OF PURE METALS.
Pt. 1 of Fundamental Studies on Cermets. [1961][15]p.
17 refs.
Order from SLA \$1.60

61-18297

Trans. of Nihon Kinzoku Gakkai Shi (Japan) 1960,
v. 24, no. 2, p. 117-122.

DESCRIPTORS: *Liquid metals, Surface tension,
*Cermets.

We first describe the measurement of surface tension
of molten metals by the sessile drop method, and then
deduce a semi-theoretical equation as follows:

$$U_s = 8m(Lv - RT/2)N^{-\frac{1}{3}}V^{-\frac{2}{3}} \text{ or } \gamma = KmLvN^{-\frac{1}{3}}V^{-\frac{2}{3}},$$

where U_s is the surface energy, γ the surface tension,
 Lv the molar heat of vaporization, N the Loschmidt's
(Metallurgy, TT, v. 6, no. 9) (over)

I. Monma, K.
II. Suto, H.
III. Title: Fundamental...

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Office of Technical Services

62-17172

Okamoto, G. and Sato, N.
A CONTRIBUTION TO EXPERIMENTAL METHODS
FOR KINETIC STUDY OF THE ANODIC FORMATION
OF THIN OXIDE FILMS ON METALS: KINETICS OF
ANODIC FORMATION OF PASSIVE OXIDE FILMS ON
NICKEL. [1962] 9p.
Order from ATS \$15.80

ATS-41P59J

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1960,
v. 24, no. 2, p. 130-134.

DESCRIPTORS: *Metals, *Thin films, *Oxides,
*Anodes(Electrolytic cell), *Nickel, Films, Passivity.

(Metallurgy, TT, v. 8, no. 2)

- I. Okamoto, G.
- II. Sato, N.
- III. Title: Kinetics ...
- IV. ATS-41P59J
- V. Associated Technical
Services, Inc., East
Orange, N. J.

Office of Technical Services

Experimental Studies of Surface Tension of
Substitutional Binary Alloys. II. Fundamental
Studies on Cermets, by K. Monma, H. Suto.

JAPANESE, per, Nippon Kinzoku Gakkai-Si, Mar 1960,
pp 163-167. _____

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Experimental Studies of the Surface Tension of
Fe-Co-NiC Alloys. III. Fundamental Studies
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1960, pp 167-170. _____

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Apr 61

Determination of the Solubility and Diffusion
Coefficient of Hydrogen in Zirconium, by
Matsumi Someno.
JAPANESE, per, Nippon Kinzoku Gakkaishi, Vol 24,
1960, pp 249-253.
AEC WAPD-Trans-86

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Monma, Kaizo and Suto, Hajime.
EFFECT OF DISSOLVED SULFUR ON THE SURFACE
TENSION OF LIQUID COPPER. Pt. 4 of Fundamental
Studies on Cermetes. [1961] [12]p. 14 refs.
Order from SLA \$1.60

61-18298

Trans. of Nihon Kinzoku Gakkai Shi (Japan) 1960, v. 24,
no. 6, p. 374-377.

DESCRIPTORS: *Liquid metals, *Cermetes, *Copper,
Surface tension, Sulfur, Adsorption, Metallurgy

The effect of dissolved sulfur on the surface tension of
liquid copper was measured by the sessile drop method
at 1114°, 1200°, 1300° and 1340°C. Sulfur is highly
"surface active" in liquid copper, and at a sulfur con-
tent of 0.6%, the surface tension is lowered by about
620 dyn·cm⁻¹ at 1114°, 580 dyn·cm⁻¹ at 1200°, 530
dyn·cm⁻¹ at 1300° and 470 dyn·cm⁻¹ at 1340°C, re-
(Metallurgy, TT, v. 6, no. 8)

I. Monma, K.
II. Suto, H.
III. Title: Fundamental...

61-18298

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61-20501

Monma, Kaizo and Suto, Hajime.
EFFECT OF DISSOLVED OXYGEN ON THE SUR-
FACE TENSION OF LIQUID COPPER. Pt. 5 of Funda-
mental Studies on Cermets. [1961] [10]p. 5 figs.
omitted) 6 refs.

Order from SLA \$1.10

61-20501

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1960, v. 24,
no. 6, p. 377-379.

DESCRIPTORS: *Liquid metals, *Cermets, *Copper,
Surface tension, Oxygen, Adsorption, Metallurgy.

The surface tension of pure copper in a CO atmosphere
is $1270 \text{ dyn. cm}^{-1}$ which decreases significantly with
the content of O. This phenomenon is more signifi-
cant at lower temperatures. The surface excess of O
at the surface of molten copper is estimated. Ac-
(Metallurgy, TT, v. 7, no. 5) (over)

- I. Monma, K.
- II. Suto, H.
- III. Title: Fundamental ...

Office of Technical Services

Treatment of Metal Surfaces With Acid Hydrogen Peroxide Solutions, by H. Kawamura, (Condensed Trans.).

JAPANESE, par, Nippon Kinzoku Gakkai-Shi, Vol
XXIV, No 1960, pp 710-714.

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TT-64-10551

Tanimura, Hiromu and Taniguchi, Kiichi
EFFECTS OF THE FORM OF GRAPHITE ON THE
MECHANICAL PROPERTIES OF GRAY CAST IRON.
[1963] [19p] (foreign text included) 11 refs
Order from SLA \$1.60

TT-64-10551

Trans. of [Nihon] Kinzoku Gakkai-Shi (Japan) 1961,
v. 25 [no. 2] p. 116-120. (Abstract available)

DESCRIPTORS: *Iron alloys, *Castings, Mechanical
properties, *Graphite, Microstructure, Test
methods,

The mechanical properties of gray cast irons were ex-
amined, where the structure of matrix is kept constant
and the form of graphite is variable. Three groups of
cast-iron specimens were prepared, having (1) uni-
formly distributed flaky graphite (2) eutectic form of
graphite in cellular distribution (3) and the mixed type
of the two mentioned above. Tensile tests with precise
(Metallurgy--Ferrous Metals, TT, v. 11, no. 10)over)

I. Tanimura, H.
II. Taniguchi, K.

Office of Technical Services

Electrolytic Fabrication of Very Fine Holes, by
Ro Mannichi.
JAPANESE, per, Nippon Kinsaku Gakkaishi, Vol 64,
No 511, Aug 1961, pp 1149-1157. P911063868-V
AEC ORNL-Tr-1827

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Effect of Zinc and Aluminum on Corrosion of
Aluminum Brass by Polluted Water, by Zenichi Tanabe.
JAPANESE, per, Nippon Kinzoku Gakkaishi, Vol 27,
No 7, 1963, pp 337-341.
*AEC/ORNL

Sci/Chem
Feb 70

Plastic Strain Ratio of Single
Crystals of Low Carbon Steel,
by H. Nagashima, S. Sekine, et al.
JAPANESE, per, Nippon Kinzoku
Gakkaishi, Vol 27, No 10, 1963,
pp 481-485.
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Sci/MAM
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Direct Observation of the Transformation
From O' to O Phase During Precipitation
in an Al-Cu Alloy, by M. Nenoto, S. Boda.
JAPANESE, per, Nihon Kinzoku Gakkai, Vol 27,
No 12, 1963, pp 599-604.
NLL Ref: 9022.09 1965 (4021)

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Properties of Zinc-0. 6%, Copper-0.
10% Titanium Rod Wire, by T, Kido.
JAPANESE, per Nihon Kinzoku Gakkaishi
Vol. 28, No. 2, 1964, pp 86-90
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Aug 67

337-483

Effect of Cobalt and Tungsten on the
Activity of Nitrogen in Austenite,
by T. Mori, E. Ichise.
JAPANESE, per, Nippon Kinzoku Gakkai Shi,
Vol XXVIII, No 3, 1964, pp 145-148.
NASA TT F-9864

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May 66

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Diffusion of Ni-63 and Cr-51 in Ni-Cr
Alloys. On the Relation Between High-
Temperature Creep and Diffusion in
Nickel Base Solid Solutions, by K. Monma,
5 pp.
JAPANESE, per, Nippon Kinzoku Gakkaishi
28, 1964, pp. 188-192.
*Nat. Bur. Stand. TT 70-57153

Sci/chem
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Diffusion of Ni-63 and Cu-64 in Ni-Cu Alloys. On the Relation Between High-Temperature Creep and Diffusion in Nickel Base Solid Solids; by K. Monma, 5 pp. JAPANESE, per, Nippon Kinzoku Gakkaishi, 28, 1964, pp. 192-196.
*Nat. Bur. Stand. TT 70-57154

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Diffusion of Ni-63 and W-185 in Ni-W alloys. On the
Relation Between High-Temperature Creep and Diffusion
in Nickel Base Solid Solutions, by K. Monma.
JAPANESE, per, Nippon Kinzoku Gakkaishi, Vol 28,
1964, pp 197-200.
*CFSTI TT 70-57155

Sci-Chem
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